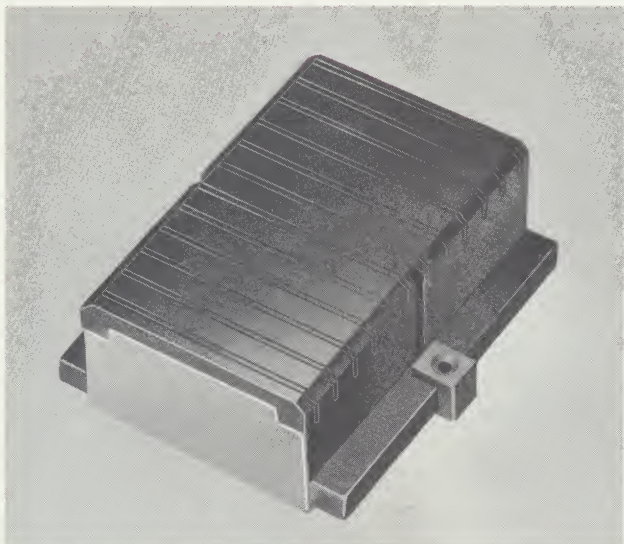




**FERROXCUBE
CORPORATION OF AMERICA**
SAUGERTIES, NEW YORK

**STANDARD
FLYING DRUM
RECORDING HEAD**
8 and 12 Tracks
Bulletin 1005



Standard FERROXCUBE Flying Drum Recording Head, 12 Tracks.

Flying Drum Recording Heads offer drum memory performance unobtainable with standard fixed heads. These heads actually fly above the surface of the drum through precise aerodynamic principles. Effects of drum runout, such as output signal amplitude fluctuations are minimized. In addition, closer drum-to-head heights are possible, providing superior electrical performance.

The use of high density high permeability fer-rite cores, fabricated with a patented molten glass bonding process, makes this exceptional performance possible.

In addition to this standard line, we also invite inquiries on custom designed heads for specific flying, contact, and video applications.

ELECTRICAL CHARACTERISTICS

	<u>8 Track Head</u>	<u>12 Track Head</u>
Inductance:	130 μ H	15 μ H
Number of Turns:	62	30
Resonant Frequency:	5 Mc/s, min.	5 Mc/s, min.
Write Current:	100 ma p-p 140 ma p-p	150 ma p-p —
Output Voltage at 100 Kc/s:	180 mv ($I_w = 100$ ma) 200 mv ($I_w = 140$ ma)	18 mv —
Output Voltage Loss: at 400 Kc/s:	$\leq 10\%$	$\leq 15\%$
Adjacent Channel Crosstalk:	≤ 40 db	≤ 40 db

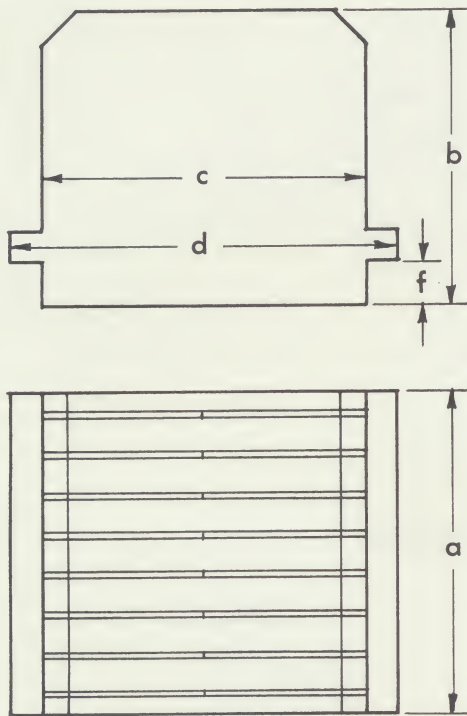
MECHANICAL SPECIFICATIONS

Track Width:	.028"	.0142"
Track Spacing:	.083" center-to-center	.087" center-to-center

NOTE—The above characteristics and specifications have been determined on iron oxide coated drums with the following parameters:

Diameter:	9.45"	15.8"
R.P.M.:	4500	1800
Spring Pressure:	250 grams	420 grams
Coating Thickness:	630 micro inches	355 micro inches

PHYSICAL DIMENSIONS

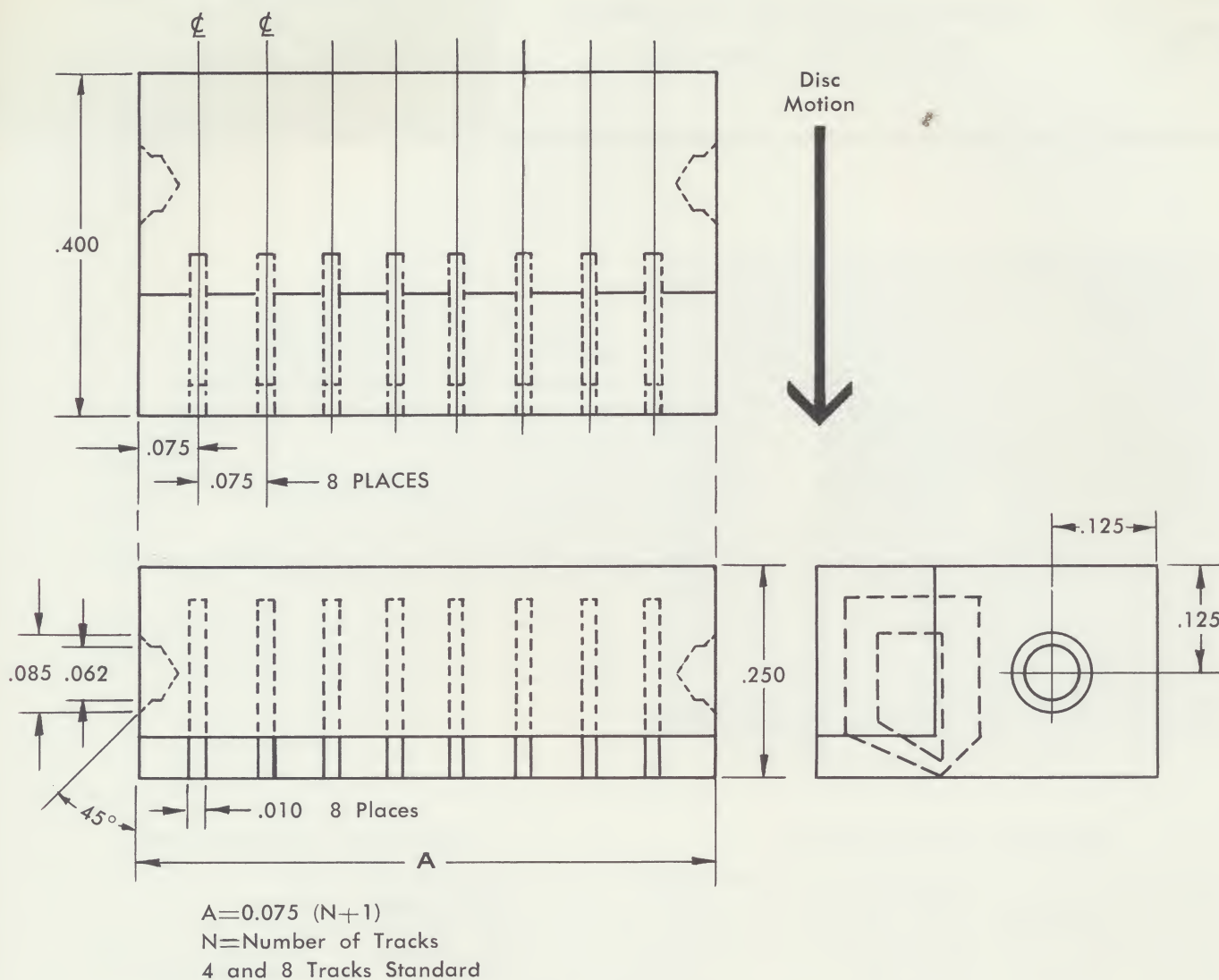


Dim.	8 Track	12 Track
a	.740"	1.031"
b	.678"	.429"
c	.740"	.669"
d	.898"	.945"
f	.102"	0

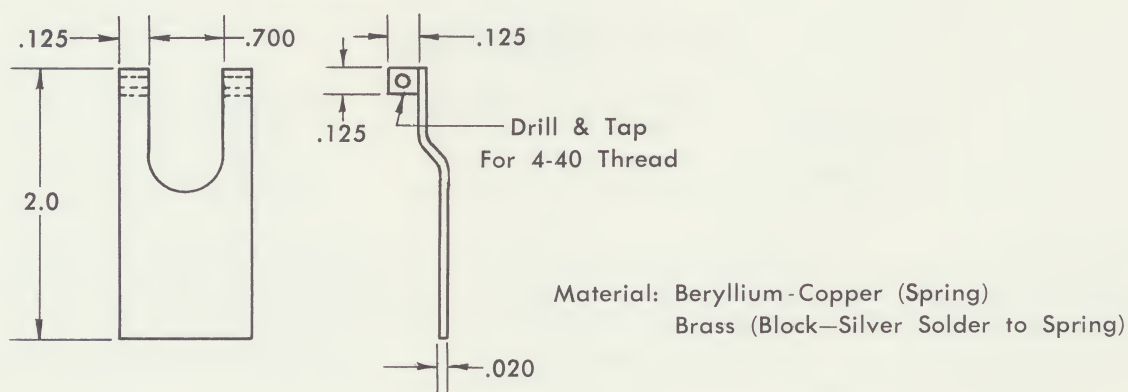


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PHYSICAL DIMENSIONS



SUGGESTED MOUNTING ASSEMBLY

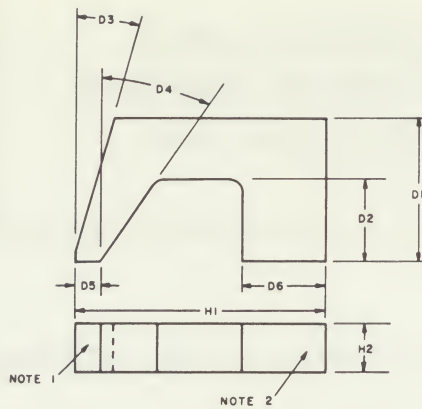


ORDERING INFORMATION:

Model FD-1 indicates 1-track; Model FD-12 indicates 12-tracks. Use Model Number (FD) and follow with digit indicating desired number of tracks.

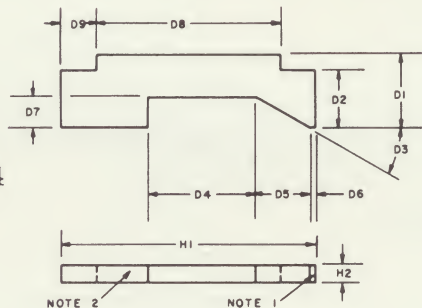
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TYPE 3



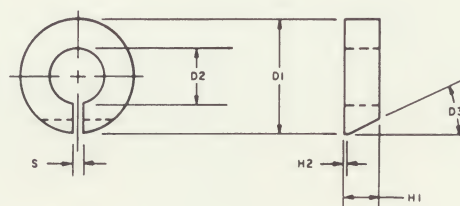
FERROXCUBE PART NUMBER	DIMENSIONS (INCHES)							
	D1	D2	D3	D4	D5	D6	H1	H2
393R	.180 REF	.101 REF	45° REF	45° REF	.020 ⁺ .005 -.000	.120 ⁺ .000 -.015	.433 REF	.040±.001
517R	.101±.001	.056±.001	16° REF	35° REF	.0175±.0025	.059±.001	.1755±.001	.034 ⁺ .001 -.000

TYPE 4



FERROXCUBE PART NUMBER	DIMENSIONS (INCHES)										
	D1	D2	D3	D4	D5	D6	D7	D8	D9	H1	H2
372R	.260±.001	.198 REF	30° REF	.375 REF	.190 REF	.015 REF	.110 REF	.633 REF	.125 REF	.883±.001	.025±.002

TYPE 5



FERROXCUBE PART NUMBER	DIMENSIONS (INCHES)					
	D1	D2	D3	S	H1	H2
396R	.243±.003	.1205±.0045	25°±1°	.021±.001	.072±.001	.005 MAX

Note (1) Maximum chips allowable in this area: .005 or 10%, whichever is less.

Note (2) Maximum chip allowable in this area: .010.

Note (3) Maximum chip allowable throughout rest of core: .015.

Note (4) Refer to bulletin number TD-9 for basic characteristics of recording head materials.



**FERROXCUBE
CORPORATION OF AMERICA**
SAUGERTIES, NEW YORK

**FERROXCUBE
RECORDING HEAD
MATERIALS**

Bulletin 1001

Recording head cores with their exacting mechanical tolerances and intricate shapes have required the development of special, highly controlled materials. Consistency of particle size and even, high pressing densities have been developed to meet these demanding requirements. In view of the small amounts of material used, processes were

practicable which would be prohibitively expensive for other applications. The greatly improved characteristics cannot be fully described in a conventional characteristics chart. However, listed below are material specifications which attempt to show the improved specifications being reflected largely in initial permeability and density limits.

FERROXCUBE MATERIAL	CHARACTERISTICS *						
	INITIAL PERMEABILITY (μ_o)	FLUX DENSITY AT SATURATION (B_{sat})	LOSS FACTOR $\frac{TAN \delta}{\mu_o}$	SPECIFIC DENSITY	RESISTIVITY (ρ)	CURIE TEMPERATURE (T_c)	PRACTICAL FREQUENCY RANGE
3R1	1100±20%	3400±20%	≤ 45×10 ⁻⁶ at 250 kc/s	4.8 - 5.0	≥ 60	≥ 150°C	Up to 500 kc
3R3	2900±20%	4000±20%	≤ 90×10 ⁻⁶ at 500 kc/s	4.8 - 5.0	≥ 50	≥ 100°C	Up to 500 kc
3R5	2300±20%	4250±20%	≤ 90×10 ⁻⁶ at 500 kc/s	4.8 - 5.0	≥ 60	≥ 150°C	Up to 500 kc
3R6	1500±20%	> 4500	≤ 75×10 ⁻⁶ at 500 kc/s	4.8 - 5.0	≥ 60	≥ 200°C	Up to 500 kc
3R7	4300±20%	4000±20%	≤ 90×10 ⁻⁶ at 500 kc/s	4.7 - 5.0	≥ 30	≥ 170°C	Up to 500 kc
4R1	1100±20%	2200±20%	≤ 150×10 ⁻⁶ at 500 kc/s	4.9 - 5.2	≥ 10 ⁵	≥ 100°C	Up to 500 kc
4R2	850±20%	2500±20%	150×10 ⁻⁶ at 1000 kc/s	4.9 - 5.2	≥ 10 ⁵	≥ 125°C	Up to 2 mc
4R3	400±20%	3500±20%	300×10 ⁻⁶ at 2000 kc/s	4.9 - 5.2	≥ 10 ⁵	≥ 250°C	Up to 5 mc
4R4	300±20%	3400±20%	350×10 ⁻⁶ at 5000 kc/s	4.9 - 5.2	≥ 10 ⁵	≥ 350°C	Up to 10 mc

* Flux density at saturation (B_{sat}) is in gauss, specific density is in g/cm³, and resistivity (ρ) is in ohms cm.